ABBREVIATIONS

A or AMP	AMPERES
AC	ALTERNATING CURRENT
AF	AMP FUSE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
AL	ALUMINUM
AS	AMP SWITCH
ATS	AUTOMATIC TRANSFER SWITCH
BAS	BUILDING AUTOMATION SYSTEM
BKR	BREAKER
C	RACEWAY/CONDUIT
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CLG	CEILING
C.O.	RACEWAY/CONDUIT ONLY, WITH PULL STRING
CNTRL	CONTROL
CU	COPPER
DISC	DISCONNECT
DIST	DISTRIBUTION
DWG	DRAWING
EA	EACH
EF	EXHAUST FAN
ELEC	ELECTRIC
EMT	ELECTRICAL METALLIC TUBING
EQUIP	EQUIPMENT
EX OR EXIST	EXISTING
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FD	FUSED DISCONNECT
FLR	FLOOR
GEC	GROUNDED ELECTRODE CONDUCTOR
GFI	GROUND FALUT INTERRUPTER
GND	GROUND
GRC	GALVANIZED RIGID CONDUIT
HOA	HAND–OFF–AUTOMATIC
HP	HORSEPOWER
HTR	HEATER
HVAC	HEATING, VENTILATING & AIR CONDITIONING
HZ	HERTZ
J–BOX	JUNCTION BOX
KVA	KILOVOLT AMPERES
KW	KILOWATTS
LTG	LIGHTING
LPW	LUMENS PER WATT
MAN	MANUAL
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MDP	MAIN DISTRIBUTION PANEL
MECH	MECHANICAL
MIN	MINIMUM
MSS	MOTOR STARTER SWITCH
N	NEUTRAL
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NFD	NON–FUSED DISCONNECT
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
#	NUMBER
OAE	OR APPROVED EQUAL
OC	ON CENTER
OCPD	OVERCURRENT PROTECTION DEVICE
OH	OVERHEAD
P	POLE
PB	PUSHBUTTON
PNL	PANEL
PVC	POLYVINYL CHLORIDE CONDUIT
PWR	POWER
RECEPT	RECEPTACLE
RCPT	RECEPTACLE
RGS	RIGID GALVANIZED STEEL
RM	ROOM
SPEC	SPECIFICATION
SSPB	START–STOP PUSHBUTTON
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
TB	TELEPHONE BOARD
TEL	TELEPHONE
TSP	TWISTED SHIELDED PAIR
TTB	TELEPHONE TERMINAL BOARD
TYP	TYPICAL
UG	UNDERGROUND
UH	UNIT HEATER
UNO	UNLESS NOTED OTHERWISE
UON	UNLESS OTHERWISE NOTED
V	VOLT
VA	VOLT AMPERES
VFD	VARIABLE FREQUENCY DRIVE
W	WATTS
WP	WEATHERPROOF
W/O	WITHOUT
XFMR	TRANSFORMER
Y	WYE CONNECTED
△	DELTA CONNECTED
Ø	PHASE

*THESE ABBREVIATIONS COMPRISE A STANDARD LIST; NOT ALL ABBREVIATIONS APPEAR ON THIS PROJECT.

ELECTRICAL SYMBOL LEGEND

SYMBOL	DESCRIPTIONS	MOUNTING HEIGHT, UNO
P-1 DEVICE	PANEL AND CIRCUIT DESIGNATION ARE SHOWN NEXT TO EACH DEVICE (PANEL NAME – CIRCUIT NUMBER). BRANCH CIRCUIT WIRE SIZE IS #12 UNLESS NOTED OTHERWISE. A SINGLE INSULATED GREEN GROUND CONDUCTOR SHALL BE PROVIDED WITH EACH HOME RUN. PROVIDE A SEPARATE NEUTRAL FOR EACH CIRCUIT. HOME RUNS SHALL HAVE NO MORE THAN THREE CIRCUITS. LINE VOLTAGE AND LOW VOLTAGE WIRING IS NOT SHOWN ON PLANS.	
	RACEWAY CONCEALED IN WALL, FLOOR, OR CEILING IN FINISHED SPACES, EXPOSED IN UNFINISHED SPACES.	
	RACEWAY TURNED UP AND CONTINUED	
	RACEWAY TURNED DOWN AND CONTINUED	
	RACEWAY BELOW FLOOR OR BELOW GRADE	
	RACWAY STUB–OUT OR STUB–UP WITH BUSHED END	
M	UTILITY ELECTRIC METER	
	MOTOR CONNECTION	
M	METER	
	LINE BREAK	
1	KEY NOTE. REFER TO SPECIFIC NOTE ON SAME DRAWING SHEET.	
	SURFACE FLUORESCENT TO SCALE. STEM INDICATES WALL MOUNTED.	
A	RECESSED FLUORESCENT LUMINAIRE. "A" LETTER DESIGNATES LUMINAIRE TYPE. 'a', AND 'b'.DESIGNATES SWITCH LEGS.	
A	RECESSED EMERGENCY FLUORESCENT LUMINAIRE. "A" LETTER DESIGNATES LUMINAIRE TYPE. 'a', AND 'b'.DESIGNATES SWITCH LEGS.	
	SURFACE FLUORESCENT STRIP LUMINAIRE.	
	EXIT SIGN. ARROW(S) INDICATE DIRECTION OF TRAVEL, SHADED AREA INDICATES ILLUMINATED FACE(S). STEM INDICATES WALL MOUNTED. CELING MOUNTED OTHERWISE.	
	EMERGENCY LIGHTING UNIT	
	RECESSED CAN LUMINAIRE	
	SWITCH:	
$	SINGLE POLE	46"
$3	3–WAY	46"
$4	4–WAY	46"
$ab	WALL SWITCHES WITH SWITCH LEG CIRCUITS 'a', AND 'b'. PROVIDE SEPARATE SWITCH FOR EACH LEG.	46"
$M	SMALL MOTOR DISCONNECT WITH THERMAL OVERLOADS	46"
ab	WALL SWITCHES WITH SWITCH LEG CIRCUITS 'a', AND 'b'. PROVIDE SEPARATE SWITCH FOR EACH LEG.	46"
$OS	WALL SWITCH WITH INTEGRAL OCCUPANCY SENSOR. WATTSTOPPER DW–100, OR EQUAL.	46"
$K	KEYED SWITCH	46"
	MOTION DETECTOR. WATT STOPPER DT–300 DUAL TECHNOLOGY CEILING MOUNT OR EQUAL.	
K	WALL MOTION DETECTOR. WATT STOPPER DT–200 DUAL TECHNOLOGY WALL MOUNT OR EQUAL.	46"
	DUPLEX RECEPTACLE.	18"
	DUPLEX RECEPTACLE, CIRCUITED TO "EMERGENCY EQUIPMENT POWER".	18"
	DUPLEX GFI RECEPTACLE.	18"
	4PLEX RECEPTACLE.	18"
	SPECIAL PURPOSE OUTLET, LETTER INDICATES TYPE. SEE SPEC.	18"
	SURFACE MOUNTED RACEWAY	
J	JUNCTION BOX	
	DISCONNECT SWITCH	
	FUSED DISCONNECT SWITCH	
	BRANCH CIRCUIT PANELBOARD	
	BREAKER	
	GROUNDING BUS	
	HORN/STROBE COMBINATION	82"
	STROBE	82"
E	NURSE CALL STATION, LETTER "E" INDICATES EMERGENCY	
N	NURSE CALL DOME LIGHT.	
	ANALOG TELEPHONE OUTLET WITH JACKS FOR TWO ANALOG CABLE DROPS U.N.O. (1)	18"
	DIGITAL TELEPHONE OUTLET WITH JACK FOR ONE (1) CABLE DROP, U.N.O. (1)	18"
	TELEPHONE/DATA OUTLET WITH JACKS FOR (3) DIGITAL VOICE/DATA DROPS AND (1) ANALOG FAX CABLE DROP. U.N.O.(1)	18"

(1) FOR EACH TELEPHONE AND/OR COMPUTER OUTLET, INSTALL REQUIRED BACKCAN, CONDUIT (1" MINIMUM) w/INSULATED THROAT BUSHING AND PULL CORD ONLY, TO ACCESSIBLE SPACE ABOVE CEILINGS, UNLESS NOTED OTHERWISE. VERIFY EXACT LOCATIONS, PRIOR TO ROUGH–IN. CABLING BY OWNER'S I.T. REPRESENTATIVE. EXISTING TELEPHONE TTB AND DATA SERVER(S) LOCATED IN ROOM 227.

1. THESE SYMBOLS COMPRISE A STANDARD LIST; NOT ALL SYMBOLS APPEAR ON THIS PROJECT.
2. ALL MOUNTING HEIGHTS ARE TO CENTER OF DEVICE ABOVE FINISHED FLOOR. MOUNTING HEIGHTS INDICATED ON ARCHITECTURAL WALL ELEVATIONS OR AS NOTED SPECIFICALLY ON THE DRAWINGS OR IN THE SPECIFICATIONS SHALL TAKE PRECEDENCE OVER MOUNTING HEIGHTS LISTED.

LUMINAIRE SCHEDULE

TYPE	LAMPS	DESCRIPTIONS	MANUFAC–TURER	CATALOG NO. OR SERIES	MOUNTING/ VOLTAGE	NOTES
B1	(3) 32W T8	2x4, LOUVERED PARABOLIC, WITH (2) BALLASTS, FOR "ab" SWITCHING, WITH CENTER LAMP SWITCHED SEPARATELY FROM OUTER LAMPS.	LITHONIA	2PM0–G–B–3–32–27–LS–120–GEB10RS–GMF	RECESSED/ 120	1
B1E	(3) 32W T8	SAME AS TYPE B1. INTERCEPT CLOSEST EXISTING EMERGENCY LIGHTING BRANCH CIRCUIT AND EXTEND TO THIS FIXTURE, VIA ASSOCIATED LIGHTING CONTROLS FOR SAME SPACE.	LITHONIA	2PM0–G–B–3–32–27–LS–120–GEB10RS–GMF	RECESSED/ 120	1
C1	(3) 32W T8	2x4, LINEAR LENSED TROFFER, WITH (2) BALLASTS, FOR "ab" SWITCHING, LISTED FOR WET–LOCATION. CENTER LAMP SWITCHED SEPARATELY FROM OUTER LAMPS.	LITHONIA	2WRT–G–3–32–A12125–120–GEB10RS–GMF	RECESSED/ 120	1
C1E	(3) 32W T8	SAME AS TYPE C1. INTERCEPT CLOSEST EXISTING EMERGENCY LIGHTING BRANCH CIRCUIT AND EXTEND TO THIS FIXTURE, VIA ASSOCIATED LIGHTING CONTROLS FOR SAME SPACE.	LITHONIA	2WRT–G–3–32–A12125–120–GEB10RS–GMF	RECESSED/ 120	1
C2	(2) 32W T8	2x4, LINEAR LENSED TROFFER, WITH (1) BALLAST, LISTED FOR WET–LOCATION.	LITHONIA	2WRT–G–3–32–A12125–120–GEB10RS–GMF	RECESSED/ 120	1
C2E	(2) 32W T8	SAME AS TYPE C2. INTERCEPT CLOSEST EXISTING EMERGENCY LIGHTING BRANCH CIRCUIT AND EXTEND TO THIS FIXTURE, VIA ASSOCIATED LIGHTING CONTROLS FOR SAME SPACE.	LITHONIA	2WRT–G–3–32–A12125–120–GEB10RS–GMF	RECESSED/ 120	1
F1	(2) 32W T8	4' INDUSTRIAL STRIP FIXTURE, WITH 10% UP–LIGHT.	LITHONIA	AFP–2–120–GEB10IS–GMF	SURFACE/ 120	1
G1	(2) 17W T8	2' LINEAR VANITY FIXTURE WITH WHITE ACRYLIC DIFFUSER. MOUNT AT +92" AFF.	LITHONIA	11852RE–120–GEB10RS DWC24	WALL/ 120	1
X1 X2	LED'S	EXIT SIGN, DIE–CAST ALUMINUM HOUSING, RED LETTERS, 90 MINUTE EMERGENCY OPERATION, WITH SELF–DIAGNOSTICS.	LITHONIA	LE–S–X–R–120–ELN–SD	UNIVERSAL/ 120	

NOTES:
1. PROVIDE FUSING.
2. SUBMITTED LUMINAIRE REQUIRES PRIOR APPROVAL.

GENERAL NOTE: THE ELECTRICAL CONTRACTOR SHALL VERIFY ALL CEILING TYPES AND PROVIDE ALL REQUIRED MOUNTING ACCESSORIES. FOR FIRE–RATED CEILING ASSEMBLIES, VERIFY ALL RECESSED LUMINAIRE HOUSINGS ARE FIRE–RATED OR PROVIDE FIRE–RATED, DROP–OVER ENCLOSURES OR TENT LUMINAIRE. VERIFY THAT DROP–OVER ENCLOSURES OR TENTS ALLOW FOR AIR SPACE AROUND LUMINAIRE PER MANUFACTURER'S RECOMMENDATIONS.

PROJECT NOTES:

1. PRIOR TO BID CONTRACTOR SHALL VISIT THE SITE. NOT ALL WORK REQUIRED TO COMPLETE THE PROJECT IS SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL BECOME THOROUGHLY FAMILIAR WITH ALL THE WORK REQUIRED TO COMPLETE THE PROJECT IN ADDITION TO THE LOCAL CONDITIONS AND INCLUDE SAID WORK IN THE BID.
2. DURING DEMOLITION, THE CONTRACTOR SHALL NOTE ALL EXISTING RACEWAY (BOTH SURFACE AND CONCEALED) TO THE EXTENT POSSIBLE. THESE RACEWAYS SHALL BE REUSED TO THE GREATEST EXTENT POSSIBLE TO INSURE A CLEAN FINISHED PRODUCT. WHERE PRACTICAL, AND ALLOWED PER CODE, FISHING THROUGH WALLS WITH MC CABLE IS PREFERRED TO SURFACE–MOUNTED RACEWAY.
3. CONTRACTOR SHALL REMOVE, TRANSPORT, AND LEGALLY DISPOSE OF LAMPS AND BALLASTS OFF–SITE. IT IS ASSUMED THE THE BALLASTS DO NOT CONTAIN PCBs. THE CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY IF IT IS SUSPECTED THAT BALLASTS CONTAIN PCBs.
4. ALL POWER INTERRUPTIONS SHALL BE COORDINATED WITH OWNER. ANY DISRUPTION OF WORKERS IN THE SPACE SHALL BE KEPT TO A MINIMUM AND BE COORDINATED WITH THE OWNER PRIOR TO WORK COMMENCING IN THAT SPACE. A MINIMUM OF (2) WEEKS NOTICE REQUIRED FOR MAJOR POWER OUTAGES, AND MINIMUM OF (48) HOUR NOTICE REQUIRED FOR MINOR OUTAGES.
5. CONTRACTOR SHALL EXTEND UN–SWITCHED HOT LEG FROM EXISTING EMERGENCY FIXTURE LOCATION TO NEW EMERGENCY FIXTURES. AS NEEDED. SEE DEMO PLANS FOR AN APPROXIMATION OF EXISTING EMERGENCY FIXTURE LOCATIONS. FIELD VERIFY EXACT LOCATION PRIOR TO BID.
6. GENERAL WORK PRACTICES FOR ELECTRICAL CONSTRUCTION SHALL BE IN ACCORDANCE WITH NECA 1, "STANDARD PRACTICES FOR GOOD WORKMANSHIP IN ELECTRICAL CONTRACTING." THIS PUBLICATION IS AVAILABLE FROM NECA BY TELEPHONE AT 301–657–3110 OR ON–LINE AT WWW.NECANET.ORG.
7. FIRE–RESISTANCE: PROVIDE A MINIMUM HORIZONTAL DISTANCE OF 24" BETWEEN OUTLET BOXES LOCATED ON OPPOSITE SIDES OF FIRE–RESISTANCE RATED WALLS. WHERE THIS IS NOT POSSIBLE INSTALL UL LISTED PUTTY PADS ON ALL OUTLET BOXES NOT MEETING THE 24" SEPARATION. PROVIDE A UL LISTED THROUGH–PENETRATION FIRESTOP FOR PENETRATIONS OF FIRE–RESISTANCE RATED ASSEMBLIES.
8. CONDUCTORS ARE SIZED PER THE 75 DEGREE C RATING COLUMN OF NEC TABLE 310.16. IF THE TERMINAL USED FOR A TERMINATION OF A PARTICULAR CONDUCTOR IS NOT MARKED, OR THE TERMINAL IS MARKED FOR 60 DEGREE C CONDUCTORS, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO EITHER ADJUST THE AMPACITY OF THE CONDUCTOR TO MATCH THE 60 DEGREE COLUMN OF TABLE 310.16, OR REPLACE THE TERMINAL WITH ONE RATED FOR AT LEAST 75 DEGREES C
9. FOR 20A BRANCH CIRCUIT RUNS EXTENDING BEYOND 300 LINEAR FEET. CONDUCTOR SIZE SHALL BE A MINIMUM OF #10 CU.
10. CONTRACTOR SHALL UPDATE ALL PANEL SCHEDULES WITH NEW CIRCUIT DESCRIPTIONS.
11. IT IS THE CONTRACTORS RESPONSIBILITY TO COORDINATE WITH MECHANICAL FOR PLENUM SPACES AND PROVIDE PLENUM RATED CABLES WHERE REQUIRED FOR LIGHTING CONTROL, DATA, FIRE ALARM AND ALL OTHER L.V. SYSTEMS NOT INSTALLED IN CONDUIT.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF ALL ELECTRICAL SERVICE WORK WITH UTILITY. OWNER PAYS ALL FEES, CONTRACTOR DOES ALL SCHEDULING AND COORDINATION OF WORK. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE ALL SCHEDULES ARE MET.
13. EXISTING SPECIAL SYSTEMS SERVICE PROVIDERS ARE:
    * SECURITY SYSTEMS – MANAGED BY VA POLICE.
    * ACCESS CONTROL SYSTEM – KENCO SECURITY, HELENA, MT 406–449–2696.
    * NURSE CALL SYSTEM – RAULAND–BORG SYSTEM SERVICED BY EVCO INC, SPOKANE WA. 800–535–3826.
14. FOR NEW OUTLETS BEING INSTALLED ON EXISTING WALLS: FISHING METAL–CLAD CABLE IN EXISTING WALLS IS PREFERRED, BUT SURFACE–MOUNT RACEWAY IS ALLOWED. WIREMOLD 2400 SERIES DIVIDED RACEWAY FOR COMBINATION POWER/DATA CIRCUITS, OR V700 SERIES FOR SINGLE–PURPOSE CIRCUITS, OR APPROVED EQUALS.
15. WORK IS BEING DONE IN THIS BUILDING BY OTHERS, PRIOR TO THIS PROJECT CONSTRUCTION, THAT WILL AFFECT THE AVAILABLE CAPACITY OF THE ELECTRICAL DISTRIBUTION SYSTEM. ALL SHOWN CONNECTIONS IN THIS PROJECT WERE BASED ON THE ENGINEER'S UNDERSTANDING OF THE EXISTING CONDITIONS AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL BE COMPLETELY RESPONSIBLE FOR DETERMINING CIRCUIT BREAKER AVAILABILITY, AND AVAILABLE CAPACITY OF THE AFFECTED ELECTRICAL SYSTEM, PRIOR TO BID.

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18 July 2014

Revisions:	Date
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MONTANA 06/30/2015 RICHARD J. HEBERT 19773PE REGISTERED PROFESSIONAL ENGINEER

ARCHITECT/ENGINEERS:

VCI Program, Project and Construction Management

Drawing Title: ELECTRICAL SYMBOLS AND ABBREVIATIONS

Project Title: VAMC FORT HARRISON SPD RENOVATION

Project Number: 436-14-109
Building Number: 154

Approved: Project Director: AARON DRIVDAHL, PROJECT ENGINEER, VAMC FORT HARRISON

Location: FT. HARRISON, MONTANA

Date: 07/18/2014 | Checked: ACB | Drawn: RJH

Drawing Number: ES001
Dwg. 33 of 39

Office of Construction and Facilities Management
Department of Veterans Affairs

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VA FORM 08-6231

1 PARTIAL ELECTRICAL ONE-LINE DIAGRAM

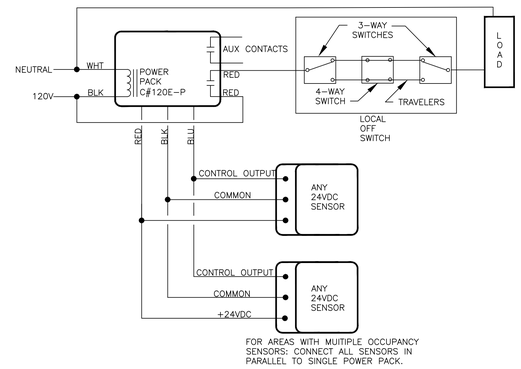
E8601 — 1/4" = 1'-0"

GENERAL NOTES:

1. IT IS ABSOLUTELY NECESSARY FOR ALL TRADES INVOLVED TO COORDINATE WITH EACH OTHER AND VERIFY THAT THERE ARE NO CONFLICTS IN LOCATION OF DUCTS, CONDUITS, DIFFUSERS, BOXES, AND OTHER ITEMS THROUGHOUT THIS PROJECT BEFORE FINAL PLACEMENT OF MATERIALS.
2. EACH BRANCH CIRCUIT HOMERUN SHALL HAVE: NO MORE THAN THREE CIRCUITS, A SEPARATE NEUTRAL FOR EACH CIRCUIT, AND A SEPARATE GREEN INSULATED EQUIPMENT GROUNDING CONDUCTOR.
3. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL CUTTING OF FLOORS, WALLS, CEILINGS, AND ROOFS TO PERFORM THE REQUIRED WORK DEPICTED IN THESE DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR ALL PATCHING OF HOLES TO THE SATISFACTION OF THE ARCHITECT/ENGINEER.
4. EXACT PANEL BREAKER/SPACE AVAILABILITY IS UNCERTAIN AT THE TIME OF CONSTRUCTION FOR THIS PROJECT. CONTRACTOR IS RESPONSIBLE FOR VERIFYING AVAILABLE CAPACITY OF THE ELECTRICAL SYSTEM, INCLUDING BUT NOT LIMITED TO: PANELBOARDS, BREAKERS, FEEDERS AND CONDUIT, PRIOR TO ADDING ANY ELECTRICAL LOADS.

KEY NOTES:

1. REPLACE EXISTING 150A/3P BREAKER WITH NEW 225A/3P BREAKER.
2. DISCONNECT/REMOVE EXISTING FEEDER CONDUCTORS FROM EXISTING 'NORMAL POWER' DISTRIBUTION SWITCHBOARD BREAKER TO EXISTING PANELS 154–103, 154–203–1 AND 154–203–2, AND REPLACE WITH NEW COMPACT FEEDER CONDUCTORS IN EXISTING CONDUIT.
3. EXISTING PANEL 203 SECTION 1 IS GE AQF3302 SERIES, AND HAS MULTIPLE SPARE 20A/1P BREAKERS AVAILABLE FOR USE. AT THE TIME OF THIS DESIGN, THE FOLLOWING PANLEBOARD CIRCUIT BREAKER LOCATIONS WERE BELIEVED TO BE AVAILABLE AND WERE USED FOR THIS PROJECT DESIGN: 2,4,5,6,9,13,15,17,18,19,21,23,25,26,28 AND 30. CONTRACTOR SHALL VERIFY BREAKER/SPACE AVAILABILITY, AND SYSTEM AVAILABLE CAPACITY, PRIOR TO BID.
4. EXISTING PANEL 203 SECTION 2 IS SQUARE D TYPE NQOD, DOES NOT HAVE AVAILABLE SPARE BREAKERS, BUT DOES HAVE MULTIPLE AVAILABLE SPACES. CONTRACTOR SHALL PROVIDE APPROPRIATELY SIZED BREAKER FOR EACH NEW CIRCUIT ADDED TO THIS PANEL. CONTRACTOR SHALL VERIFY AVAILABLE SPACE, AND SYSTEM AVAILABLE CAPACITY, PRIOR TO BID.
5. EXISTING PANEL E209A IS GE AQF3302 SERIES, AND HAS MULTIPLE SPARE 20A/1P BREAKERS AVAILABLE FOR USE. AT THE TIME OF THIS DESIGN, THE FOLLOWING PANLEBOARD CIRCUIT BREAKER LOCATIONS WERE BELIEVED TO BE AVAILABLE AND WERE USED FOR THIS PROJECT DESIGN: 17,19,21 AND 23. CONTRACTOR SHALL VERIFY BREAKER/SPACE AVAILABILITY, AND SYSTEM AVAILABLE CAPACITY, PRIOR TO BID.



FOR AREAS WITH MUITIPLE OCCUPANCY SENSORS: CONNECT ALL SENSORS IN PARALLEL TO SINGLE POWER PACK.

2 MULTIPLE OCCUPANCY LIGHTING CONTROL DIAGRAM

E8601 — 1/4" = 1'-0"

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ARCHITECT/ENGINEERS:

VCI Program, Project and Construction Management

Drawing Title	ELECTRICAL ONE-LINE DIAGRAM
Approved: Project Director	AARON DRIVDAHL, PROJECT ENGINEER, VAMC FORT HARRISON
Project Title	VAMC FORT HARRISON SPD RENOVATION
Location	FT. HARRISON, MONTANA
Date	07/18/2014
Checked	ACB
Drawn	RJH
Project Number	436-14-109
Building Number	154
Drawing Number	ES601
Dwg. 34 of 39	

Office of Construction and Facilities Management
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VA FORM 08–6231

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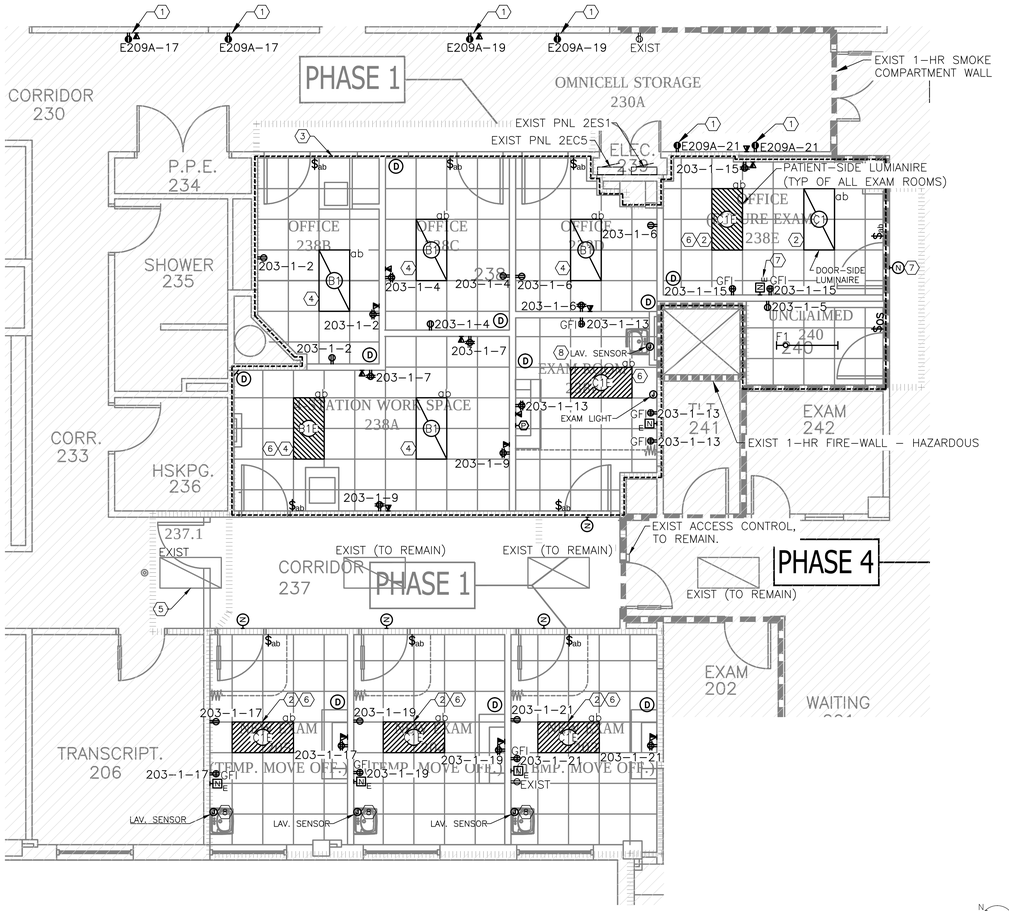


1 ES101 **PHASE 1 - ELECTRICAL PLAN**

1/4" = 1'-0"

PLAN NORTH

KEY NOTES:

1. PROVIDE OUTLETS FOR OMNICELL: OMNICELL RECEPTACLES SHALL BE CIRCUITED TO "EMERGENCY EQUIPMENT POWER" CIRCUIT (EXISTING PANEL E209A, OR OTHER EXISTING 2ND FLOOR EMERGENCY POWER PANEL). OMNICELLS ARE CONNECTED IN MASTER/SLAVE CONFIGURATION, WITH ONLY THE MASTER CELL REQUIRING A DATA CONNECTION. VERIFY EXACT QUANTITY AND LOCATION OF REQUIRED DATA OUTLETS, WITH OWNER'S I.T. REPRESENTATIVE, PRIOR TO ROUGH-IN. PROVIDE APPROPRIATELY-SIZED BREAKER, IN EXISTING PANEL, AS REQUIRED PER NEC. (TYPICAL OF ALL OMNICELL OUTLETS.)
2. EXAM ROOM LTG: EXTEND EXISTING LIGHTING CIRCUIT TO DOOR-SIDE LUMINAIRE (WHERE PRESENT) VIA ASSOCIATED "ab" WALL SWITCH AND OCCUPANCY SENSOR. NOTE THAT THE PATIENT-SIDE LUMINAIRE SHALL BE CIRCUITED TO EMERGENCY LIGHTING CIRCUIT, VIA OCCUPANCY SENSOR AND ASSOCIATED WALLSWITCH. OCCUPANCY SENSOR SHALL ENABLE THE WALLSWITCHES.
3. EXISTING ROOM 238 SPACE IS BEING RENOVATED FROM LARGELY OPEN STORAGE SPACE, INTO MULTIPLE OFFICES AND EXAM ROOMS SHOWN. EXISTING DATA AND POWER RECEPTACLES TO REMAIN. REMOVE EXIST LIGHTING CONTROLS, AND PROVIDE NEW CONTROLS PER PLAN. RELOCATE EXIST OUTLETS IF NECESSARY TO AVOID CONFLICT WITH NEW WALL OR NEW DOOR LOCATIONS. EXISTING DEVICES ARE NOT SHOWN ON PLANS.
4. OFFICE LTG: INTERCEPT EXIST LIGHTING CIRCUIT AND EXTEND TO NEW LUMINAIRE(S) VIA NEW OCCUPANCY SENSOR AND "ab" WALL SWITCHES. OCCUPANCY SENSOR SHALL ENABLE THE WALL SWITCHES.
5. DISCONNECT/REMOVE EXIST FIXTURE AND ITS CONDUCTORS, BACK TO NEAREST UPSTREAM DEVICE, TO MAINTAIN ORIGINAL CIRCUIT CONTINUITY.
6. INTERCEPT/EXTEND EXIST EMERGENCY LIGHTING CIRCUIT TO THIS FIXTURE, VIA ASSOCIATED OCCUPANCY SENSOR/SWITCHING.
7. SPECIAL SYSTEMS DEVICE: PROVIDE J-BOX WITH BLANK COVER PLATE, 3/4" CONDUIT ONLY WITH BUSHING AND PULL-STRING TO ACCESSIBLE CEILING SPACE. SEE SYMBOL LEGEND ON SHEET ES0.1. CALL OWNER'S SERVICE REPRESENTATIVE TO CONFIRM EXACT REQUIREMENTS. (TYPICAL OF ALL.)
8. PROVIDE J-BOX WITH BLANK COVER PLATE, AND 3/4" CONDUIT ONLY WITH BUSHING AND PULL-STRING TO ACCESSIBLE CEILING SPACE, FOR FUTURE LAV SENSOR CIRCUIT. VERIFY EXACT LOCATION, PRIOR TO ROUGH-IN.

GENERAL NOTES:

A. ALL FINAL LOCATIONS AND ARRANGEMENTS OF LIGHTING FIXTURES SHALL BE OBTAINED FROM THE ARCHITECTURAL REFLECTED CEILING PLAN.

B. LIGHTING FIXTURES WITH MORE THAN TWO LAMPS SHALL HAVE TWO OUTER LAMPS CONTROLLED WITH ONE SWITCH AND INNER LAMP(S) CONTROLLED BY A SECOND SWITCH.

C. EACH BRANCH CIRCUIT HOMERUN SHALL HAVE: NO MORE THAN THREE CIRCUITS, A SEPARATE NEUTRAL FOR EACH CIRCUIT, AND A SEPARATE GREEN INSULATED EQUIPMENT GROUNDING CONDUCTOR.

D. MULTI-GANG BACKBOXES FOR DIFFERENT VOLTAGES AND TYPES OF EMERGENCY AND NORMAL BRANCH WIRING DEVICES SHALL HAVE DIVIDERS BETWEEN DEVICES.

E. IT IS ABSOLUTELY NECESSARY FOR ALL TRADES INVOLVED TO COORDINATE WITH EACH OTHER AND VERIFY THAT THERE ARE NO CONFLICTS IN LOCATION OF DUCTS, CONDUITS, DIFFUSERS, BOXES, AND OTHER ITEMS THROUGHOUT THIS PROJECT BEFORE FINAL PLACEMENT OF MATERIALS.

F. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL CUTTING OF FLOORS, WALLS, CEILINGS, AND ROOFS TO PERFORM THE REQUIRED WORK DEPICTED IN THESE DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR ALL PATCHING OF HOLES TO THE SATISFACTION OF THE ARCHITECT/ENGINEER.

G. PANEL AND CIRCUIT DESIGNATION ARE SHOWN NEXT TO EACH DEVICE(PANEL NAME – CIRCUIT NUMBER). BRANCH CIRCUIT WIRE SIZE IS #12 UNLESS NOTED OTHERWISE. LINE VOLTAGE AND LOW VOLTAGE WIRING IS NOT SHOWN ON PLANS.

H. PERTAINING TO ALL 120V RECEPTACLES IN PATIENT AREAS: ALL NEW RECEPTACLES SHALL HAVE HOSPITAL GRADE LISTING, AND ALL EXISTING NON-HOSPITAL GRADE RECEPTACLES SHALL BE REPLACED WITH HOSPITAL GRADE LISTED RECEPTACLES.

I. NEW "EMERGENCY EQUIPMENT POWER" CIRCUITS SHALL COME FROM EXISTING PANEL E209A. NEW "NORMAL POWER" CIRCUITS SHALL COME FROM EXISTING PANEL 203-1 AND -2. SEE SHEET ES1.3 FOR PANEL LOCATIONS.

J. SEE SHEET A7.2-1 FOR PHASE 1 NEW CEILING GRID LAYOUT.

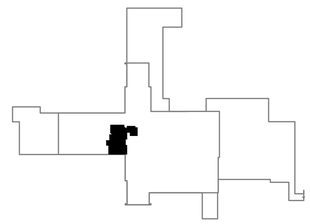
GENERAL NOTES – DEMOLITION:

A. EXISTING EQUIPMENT, SUCH AS LIGHTING FIXTURES, WIRING DEVICES, CONDUITS, ETC., THAT ARE NOTED ON PLANS TO BE REMOVED, SHALL BE REMOVED COMPLETELY. CUT/CAP ABANDONED CONDUITS AT THE AREA OF WORK PERIMETER, REMOVE CONDUITS WITHIN THE WORK AREA THAT WILL NOT BE RE-USED, DISCONNECT WIRING AT THE BRANCH OVERCURRENT PROTECTIVE DEVICE AND REMOVE WIRING COMPLETELY FROM THE ABANDONED CONDUITS.

B. REMOVE ALL ACCESSIBLE ABANDONED WIRING OF ALL TYPES, OR CAP AND LABEL IN JUNCTION BOX FOR RE-USE, IN COMPLIANCE WITH THE NATIONAL ELECTRIC CODE.

C. MAINTAIN AND RESTORE, IF INTERRUPTED, ALL CONDUITS AND CONDUCTORS PASSING THROUGH RENOVATED AREAS AND SERVICING UNDISTURBED AREAS.

D. PHASE 1 LIGHTING DEMO NOTE: DISCONNECT/REMOVE ALL EXISTING LUMINAIRES IN IMPACTED SPACES, AND SALVAGE TO OWNER. RETAIN EXISTING LIGHTING CIRCUITS FOR RE-USE. REPLACE EXISTING SWITCHING AS REQUIRED. (EXISTING FIXTURES AND SWITCHING HAVE NOT BEEN SHOWN.)



KEYPLAN - PHASE 1

Construction Document Submission
18 July 2014

Revisions:	Date
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MONTANA REGISTERED PROFESSIONAL ENGINEER RICHARD J. DAHL 19773PE 06/30/2015

ARCHITECT/ENGINEERS:

VCI Program, Project and Construction Management

Drawing Title: ELECTRICAL PLAN - PHASE 1	Project Title: VAMC FORT HARRISON SPD RENOVATION
Approved: Project Director: AARON DAVDAHL, PROJECT ENGINEER, VAMC FORT HARRISON	Location: FT. HARRISON, MONTANA
Date: 07/18/2014	Checked: ACB
Drawn: RJH	Project Number: 436-14-109
Building Number: 154	Drawing Number: ES101
Dwg. 35 of 39	Office of Construction and Facilities Management
Department of Veterans Affairs	

VA FORM 08-6231

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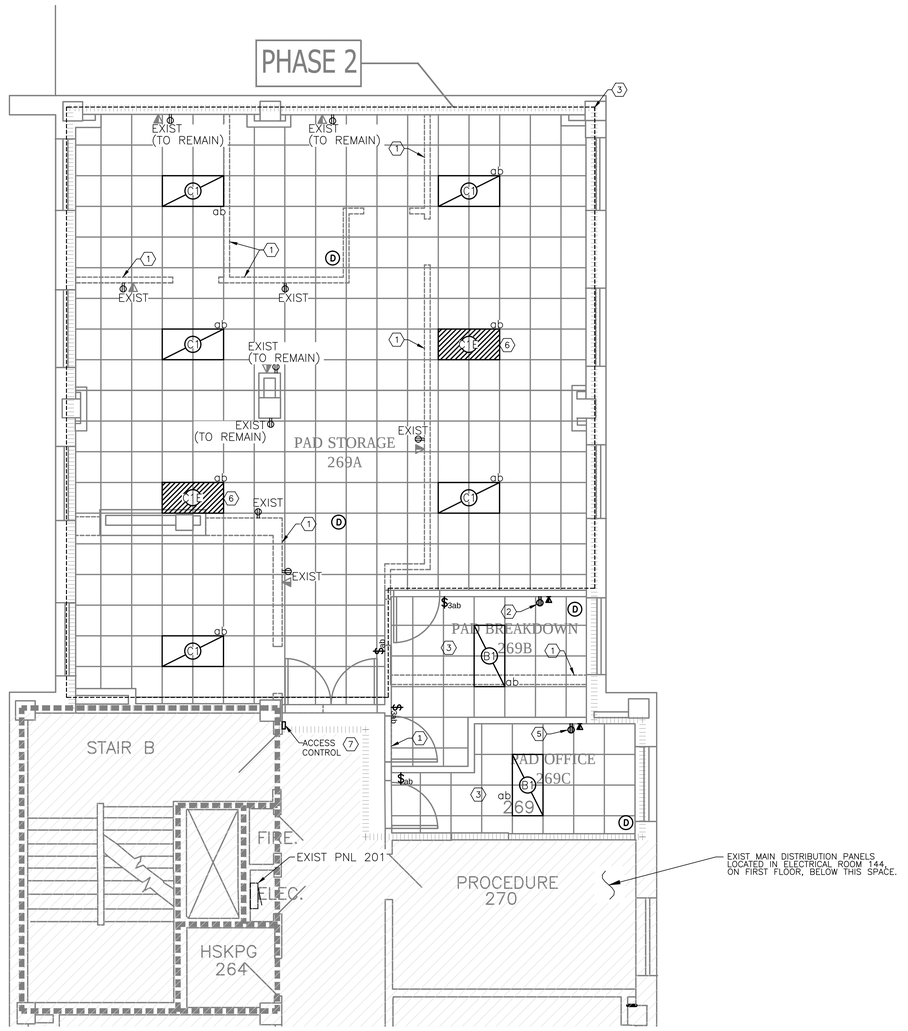


1 ES102 **PHASE 2 - ELECTRICAL PLAN**
1/4" = 1'-0"

GENERAL NOTES – DEMOLITION:

A. EXISTING EQUIPMENT, SUCH AS LIGHTING FIXTURES, WIRING DEVICES, CONDUITS, ETC., THAT ARE NOTED ON PLANS TO BE REMOVED, SHALL BE REMOVED COMPLETELY. CUT/CAP ABANDONED CONDUITS AT THE AREA OF WORK PERIMETER, REMOVE CONDUITS WITHIN THE WORK AREA THAT WILL NOT BE RE–USED, DISCONNECT WIRING AT THE BRANCH OVERCURRENT PROTECTIVE DEVICE AND REMOVE WIRING COMPLETELY FROM THE ABANDONED CONDUITS.

B. REMOVE ALL ACCESSIBLE ABANDONED WIRING OF ALL TYPES, OR CAP AND LABEL IN JUNCTION BOX FOR RE–USE, IN COMPLIANCE WITH THE NATIONAL ELECTRIC CODE.

C. MAINTAIN AND RESTORE, IF INTERRUPTED, ALL CONDUITS AND CONDUCTORS PASSING THROUGH RENOVATED AREAS AND SERVICING UNDISTURBED AREAS.

D. PHASE 2 LIGHTING DEMO NOTE: DISCONNECT/REMOVE ALL EXISTING LUMINAIRES IN IMPACTED SPACES, AND SALVAGE TO OWNER. RETAIN EXISTING LIGHTING CIRCUITS FOR RE–USE. REPLACE SWITCHING AS REQUIRED. (EXISTING FIXTURES AND SWITCHING HAVE NOT BEEN SHOWN.)

GENERAL NOTES:

A. ALL FINAL LOCATIONS AND ARRANGEMENTS OF LIGHTING FIXTURES SHALL BE OBTAINED FROM THE ARCHITECTURAL REFLECTED CEILING PLAN.

B. LIGHTING FIXTURES WITH MORE THAN TWO LAMPS SHALL HAVE TWO OUTER LAMPS CONTROLLED WITH ONE SWITCH AND INNER LAMP(S) CONTROLLED BY A SECOND SWITCH.

C. EACH BRANCH CIRCUIT HOMERUN SHALL HAVE: NO MORE THAN THREE CIRCUITS, A SEPARATE NEUTRAL FOR EACH CIRCUIT, AND A SEPARATE GREEN INSULATED EQUIPMENT GROUNDING CONDUCTOR.

D. MULTI–GANG BACKBOXES FOR DIFFERENT VOLTAGES AND TYPES OF EMERGENCY AND NORMAL BRANCH WIRING DEVICES SHALL HAVE DIVIDERS BETWEEN DEVICES.

E. IT IS ABSOLUTELY NECESSARY FOR ALL TRADES INVOLVED TO COORDINATE WITH EACH OTHER AND VERIFY THAT THERE ARE NO CONFLICTS IN LOCATION OF DUCTS, CONDUITS, DIFFUSERS, BOXES, AND OTHER ITEMS THROUGHOUT THIS PROJECT BEFORE FINAL PLACEMENT OF MATERIALS.

F. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL CUTTING OF FLOORS, WALLS, CEILINGS, AND ROOFS TO PERFORM THE REQUIRED WORK DEPICTED IN THESE DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR ALL PATCHING OF HOLES TO THE SATISFACTION OF THE ARCHITECT/ENGINEER.

G. PANEL AND CIRCUIT DESIGNATION ARE SHOWN NEXT TO EACH DEVICE(PANEL NAME – CIRCUIT NUMBER). BRANCH CIRCUIT WIRE SIZE IS #12 UNLESS NOTED OTHERWISE. LINE VOLTAGE AND LOW VOLTAGE WIRING IS NOT SHOWN ON PLANS.

H. SEE SHEET A7.2–2 FOR PHASE 2 NEW CEILING GRID LAYOUT.

KEY NOTES:

1. EXIST INTERIOR WALL TO BE DEMO'D: DISCONNECT/REMOVE ALL DEVICES ON THIS WALL. REMOVE CIRCUIT BACK TO NEAREST UPSTREAM DEVICE, TO RETAIN ORIGINAL CIRCUIT CONTINUITY. SEE KEYNOTE 2, THIS SHEET. (NOT ALL EXISTING DEVICES HAVE BEEN SHOWN.)

2. EXTEND DEMO'D CIRCUIT FROM ORIGINAL RM 268A TO THIS DEVICE. VERIFY NO MORE THAN 7 RECEPTACLES ARE CIRCUITED TO ANY SINGLE 120V/20A CIRCUIT BREAKER, PRIOR TO ROUGH–IN.

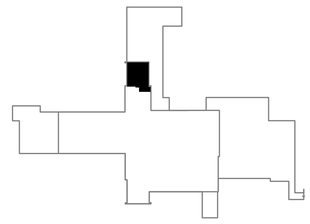
3. ORIGINAL ROOMS 265, 268, 268A, 268B, 268C: PROVIDE NEW LIGHTING FIXTURES, IN NEW GRID CEILING. RE–USE EXISTING LIGHTING CIRCUIT IN SAME SPACE, VIA NEW SWITCH(S) AND OCCUPANCY SENSOR(S). (EXISTING FIXTURES HAVE NOT BEEN SHOWN.)

4. CIRCUIT ALL LIGHTING FIXTURES IN SAME SPACE VIA ASSOCIATED OCCUPANCY SENSOR. OCCUPANCY SENSOR SHALL ENABLE THE ASSOCIATED LIGHTING CONTROL WALL–SWITCH.

5. INTERCEPT/EXTEND EXISTING CIRCUIT IN THIS SPACE (ORIGINAL ROOM 269) TO THIS DEVICE. VERIFY NO MORE THAN 7 RECEPTACLES ARE CIRCUITED TO ANY SINGLE 120V/20A CIRCUIT BREAKER, PRIOR TO ROUGH–IN.

6. INTERCEPT/EXTEND EXIST EMERGENCY LIGHTING CIRCUIT TO THIS FIXTURE, VIA ASSOCIATED OCCUPANCY SENSOR/SWITCHING.

7. ACCESS–CONTROL OUTLET: PROVIDE J–BOX WITH BLANK COVER PLATE, AND 3/4" CONDUIT ONLY WITH BUSHING AND PULL–STRING TO ACCESSIBLE CEILING SPACE. COORDINATE WITH OWNER'S ACCESS–CONTROL SYSTEM REPRESENTATIVE FOR EXACT LOCATION AND REQUIREMENTS, PRIOR TO ROUGH–IN.



KEY PLAN - PHASE 2

Construction Document Submission
18 July 2014

Revisions	Date
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MONTANA 06/30/2015 RICHARD J. HEILER 19773PE REGISTERED PROFESSIONAL ENGINEER

ARCHITECT/ENGINEERS:

VCI Program, Project and Construction Management

Drawing Title: ELECTRICAL PLAN - PHASE 2	Project Title: VAMC FORT HARRISON SPD RENOVATION	Project Number: 436-14-109	Office of Construction and Facilities Management
		Building Number: 154	
Approved: Project Director: AARON DRIVDAHL, PROJECT ENGINEER VAMC FORT HARRISON	Location: FT. HARRISON, MONTANA	Drawing Number: ES102	Department of Veterans Affairs
	Date: 07/18/2014 / Checked: ACB / Drawn: RJH	Dwg. 36 of 39	

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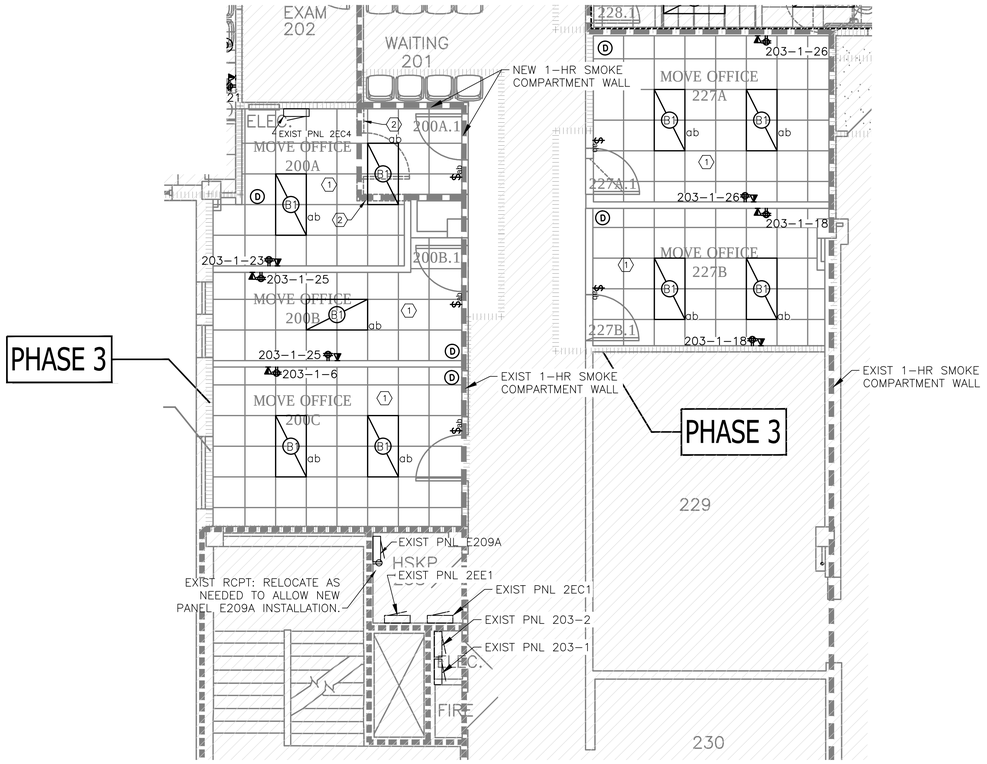


1 ES103 **PHASE 3 - ELECTRICAL PLAN**

1/4" = 1'-0"

PLAN NORTH

GENERAL NOTES – DEMOLITION:

A. EXISTING EQUIPMENT, SUCH AS LIGHTING FIXTURES, WIRING DEVICES, CONDUITS, ETC., THAT ARE NOTED ON PLANS TO BE REMOVED, SHALL BE REMOVED COMPLETELY. CUT/CAP ABANDONED CONDUITS AT THE AREA OF WORK PERIMETER, REMOVE CONDUITS WITHIN THE WORK AREA THAT WILL NOT BE RE-USED, DISCONNECT WIRING AT THE BRANCH OVERCURRENT PROTECTIVE DEVICE AND REMOVE WIRING COMPLETELY FROM THE ABANDONED CONDUITS.

B. REMOVE ALL ACCESSIBLE ABANDONED WIRING OF ALL TYPES, OR CAP AND LABEL IN JUNCTION BOX FOR RE-USE, IN COMPLIANCE WITH THE NATIONAL ELECTRIC CODE.

C. MAINTAIN AND RESTORE, IF INTERRUPTED, ALL CONDUITS AND CONDUCTORS PASSING THROUGH RENOVATED AREAS AND SERVICING UNDISTURBED AREAS.

D. PHASE 3 LIGHTING DEMO NOTE: DISCONNECT/REMOVE ALL EXISTING LUMINAIRES IN IMPACTED SPACES, AND SALVAGE TO OWNER. RETAIN EXISTING LIGHTING CIRCUITS FOR RE-USE. REPLACE EXISTING SWITCHING AS REQUIRED. (EXISTING FIXTURES HAVE NOT BEEN SHOWN.)

GENERAL NOTES:

A. ALL FINAL LOCATIONS AND ARRANGEMENTS OF LIGHTING FIXTURES SHALL BE OBTAINED FROM THE ARCHITECTURAL REFLECTED CEILING PLAN.

B. LIGHTING FIXTURES WITH MORE THAN TWO LAMPS SHALL HAVE TWO OUTER LAMPS CONTROLLED WITH ONE SWITCH AND INNER LAMP(S) CONTROLLED BY A SECOND SWITCH.

C. EACH BRANCH CIRCUIT HOMERUN SHALL HAVE: NO MORE THAN THREE CIRCUITS, A SEPARATE NEUTRAL FOR EACH CIRCUIT, AND A SEPARATE GREEN INSULATED EQUIPMENT GROUNDING CONDUCTOR.

D. MULTI-GANG BACKBOXES FOR DIFFERENT VOLTAGES AND TYPES OF EMERGENCY AND NORMAL BRANCH WIRING DEVICES SHALL HAVE DIVIDERS BETWEEN DEVICES.

E. IT IS ABSOLUTELY NECESSARY FOR ALL TRADES INVOLVED TO COORDINATE WITH EACH OTHER AND VERIFY THAT THERE ARE NO CONFLICTS IN LOCATION OF DUCTS, CONDUITS, DIFFUSERS, BOXES, AND OTHER ITEMS THROUGHOUT THIS PROJECT BEFORE FINAL PLACEMENT OF MATERIALS.

F. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL CUTTING OF FLOORS, WALLS, CEILINGS, AND ROOFS TO PERFORM THE REQUIRED WORK DEPICTED IN THESE DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR ALL PATCHING OF HOLES TO THE SATISFACTION OF THE ARCHITECT/ENGINEER.

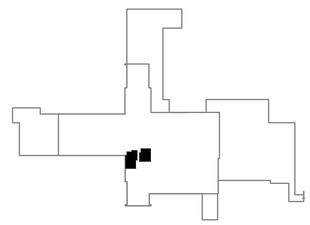
G. PANEL AND CIRCUIT DESIGNATION ARE SHOWN NEXT TO EACH DEVICE(PANEL NAME – CIRCUIT NUMBER). BRANCH CIRCUIT WIRE SIZE IS #12 UNLESS NOTED OTHERWISE. LINE VOLTAGE AND LOW VOLTAGE WIRING IS NOT SHOWN ON PLANS.

H. SEE SHEET A7.2-3 FOR PHASE 3 NEW CEILING LAYOUT.

KEY NOTES:

1. EXTEND EXISTING LIGHTING CIRCUIT TO NEW LUMINAIRES IN SAME SPACE. CIRCUIT LUMINAIRES VIA ROOM OCCUPANCY SENSOR AND LIGHTING CONTROL WALL-SWITCH(S). OCCUPANCY SENSOR SHALL ENABLE LIGHTING CONTROL WALL-SWITCH. SEE SHEET A7.2-3 FOR NEW CEILING GRID LAYOUT.

2. EXIST WALL TO BE DEMO'D: DISCONNECT/REMOVE ALL DEVICES ON THIS WALL. REMOVE CIRCUIT BACK TO NEAREST UPSTREAM DEVICE, TO RETAIN ORIGINAL CIRCUIT CONTINUITY. (EXISTING DEVICES HAVE NOT BEEN SHOWN.)



KEY PLAN - PHASE 3

Construction Document Submission
18 July 2014

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MONTANA REGISTERED PROFESSIONAL ENGINEER RICHARD J. HEIL 19773PE 06/30/2015

ARCHITECT/ENGINEERS:

VCI Program, Project and Construction Management

Drawing Title	ELECTRICAL PLAN - PHASE 3
Approved: Project Director	AARON DRIVDAHL, PROJECT ENGINEER VAMC FORT HARRISON
Project Title	VAMC FORT HARRISON SPD RENOVATION
Location	FT. HARRISON, MONTANA
Date	07/18/2014
Checked	ACB
Drawn	RJH
Project Number	436-14-109
Building Number	154
Drawing Number	ES103 Dwg. 37 of 39

Office of Construction and Facilities Management
Department of Veterans Affairs

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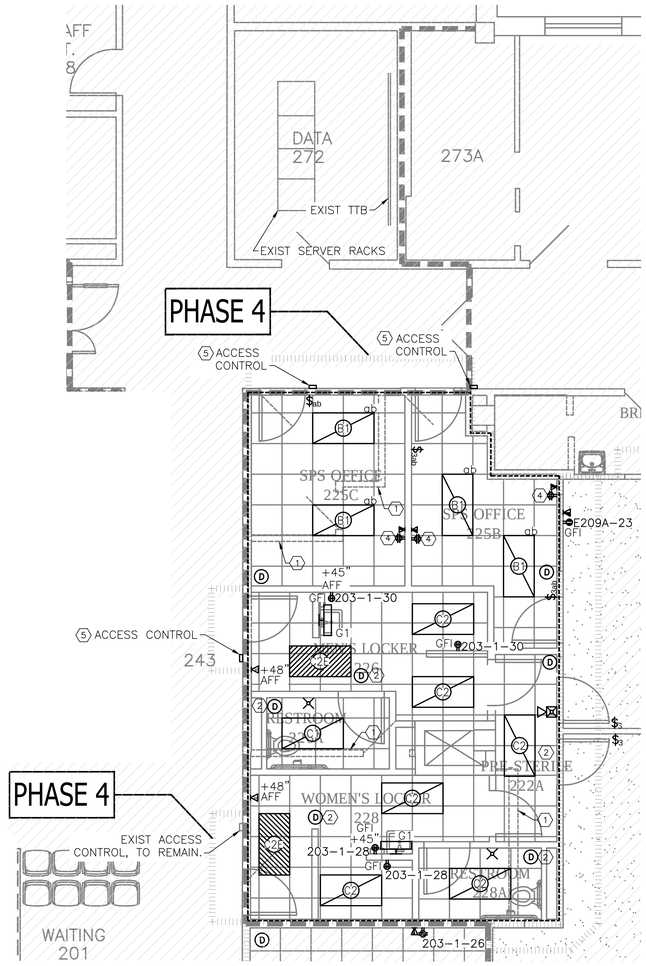


1 PHASE 4 - ELECTRICAL PLAN
ES104 1/4" = 1'-0"

N
PLAN NORTH

GENERAL NOTES – DEMOLITION:

A. EXISTING EQUIPMENT, SUCH AS LIGHTING FIXTURES, WIRING DEVICES, CONDUITS, ETC., THAT ARE NOTED ON PLANS TO BE REMOVED, SHALL BE REMOVED COMPLETELY. CUT/CAP ABANDONED CONDUITS AT THE AREA OF WORK PERIMETER, REMOVE CONDUITS WITHIN THE WORK AREA THAT WILL NOT BE RE-USED, DISCONNECT WIRING AT THE BRANCH OVERCURRENT PROTECTIVE DEVICE AND REMOVE WIRING COMPLETELY FROM THE ABANDONED CONDUITS.

B. REMOVE ALL ACCESSIBLE ABANDONED WIRING OF ALL TYPES, OR CAP AND LABEL IN JUNCTION BOX FOR RE-USE, IN COMPLIANCE WITH THE NATIONAL ELECTRIC CODE.

C. MAINTAIN AND RESTORE, IF INTERRUPTED, ALL CONDUITS AND CONDUCTORS PASSING THROUGH RENOVATED AREAS AND SERVICING UNDISTURBED AREAS.

D. PHASE 4 LIGHTING DEMO NOTE: DISCONNECT/REMOVE ALL EXISTING LUMINAIRES IN IMPACTED SPACES, AND SALVAGE TO OWNER. RETAIN EXISTING LIGHTING CIRCUITS FOR RE-USE. REPLACE EXISTING SWITCHING AS REQUIRED. (EXISTING FIXTURES HAVE NOT BEEN SHOWN.)

GENERAL NOTES:

A. ALL FINAL LOCATIONS AND ARRANGEMENTS OF LIGHTING FIXTURES SHALL BE OBTAINED FROM THE ARCHITECTURAL REFLECTED CEILING PLAN.

B. LIGHTING FIXTURES WITH MORE THAN TWO LAMPS SHALL HAVE TWO OUTER LAMPS CONTROLLED WITH ONE SWITCH AND INNER LAMP(S) CONTROLLED BY A SECOND SWITCH.

C. EACH BRANCH CIRCUIT HOMERUN SHALL HAVE: NO MORE THAN THREE CIRCUITS, A SEPARATE NEUTRAL FOR EACH CIRCUIT, AND A SEPARATE GREEN INSULATED EQUIPMENT GROUNDING CONDUCTOR.

D. MULTI-GANG BACKBOXES FOR DIFFERENT VOLTAGES AND TYPES OF EMERGENCY AND NORMAL BRANCH WIRING DEVICES SHALL HAVE DIVIDERS BETWEEN DEVICES.

E. IT IS ABSOLUTELY NECESSARY FOR ALL TRADES INVOLVED TO COORDINATE WITH EACH OTHER AND VERIFY THAT THERE ARE NO CONFLICTS IN LOCATION OF DUCTS, CONDUITS, DIFFUSERS, BOXES, AND OTHER ITEMS THROUGHOUT THIS PROJECT BEFORE FINAL PLACEMENT OF MATERIALS.

F. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL CUTTING OF FLOORS, WALLS, CEILINGS, AND ROOFS TO PERFORM THE REQUIRED WORK DEPICTED IN THESE DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR ALL PATCHING OF HOLES TO THE SATISFACTION OF THE ARCHITECT/ENGINEER.

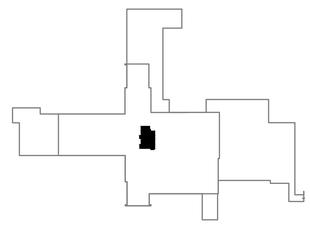
G. PANEL AND CIRCUIT DESIGNATION ARE SHOWN NEXT TO EACH DEVICE(PANEL NAME – CIRCUIT NUMBER). BRANCH CIRCUIT WIRE SIZE IS #12 UNLESS NOTED OTHERWISE. LINE VOLTAGE AND LOW VOLTAGE WIRING IS NOT SHOWN ON PLANS.

H. PERTAINING TO ALL 120V RECEPTACLES IN EXAM ROOMS AND FUTURE EXAM ROOMS: ALL NEW RECEPTACLES SHALL HAVE HOSPITAL GRADE LISTING, AND ALL EXISTING NON-HOSPITAL GRADE RECEPTACLES SHALL BE REPLACED WITH HOSPITAL GRADE LISTED RECEPTACLES.

I. SEE SHEET A7.2-4 FOR PHASE 4 NEW CEILING GRID LAYOUT.

KEY NOTES:

1. EXIST WALL TO BE DEMO'D: DISCONNECT/REMOVE ALL DEVICES ON THIS WALL. REMOVE CIRCUIT BACK TO NEAREST UPSTREAM DEVICE, TO MAINTAIN ORIGINAL CIRCUIT CONTINUITY. (EXISTING DEVICES HAVE NOT BEEN SHOWN.)
2. LIGHTING IN THIS SPACE ENABLED BY ASSOCIATED OCCUPANCY SENSORS ONLY. NO TOGGLE SWITCH FOR THIS SPACE.
3. EXTEND EXISTING LIGHTING CIRCUIT TO NEW LUMINAIRES IN SAME SPACE. CIRCUIT LUMINAIRES VIA ROOM OCCUPANCY SENSOR AND LIGHTING CONTROL WALL-SWITCH(S). OCCUPANCY SENSOR SHALL ENABLE LIGHTING CONTROL WALL-SWITCH. SEE SHEET A7.2-3 FOR NEW CEILING GRID LAYOUT.
4. CIRCUIT BACK TO AVAILABLE SPACE IN EXIST PANEL 203-2, PROVIDE 20A/1POLE BREAKER IN THAT SPACE
5. ACCESS-CONTROL OUTLET: PROVIDE J-BOX WITH BLANK COVER PLATE, AND 3/4" CONDUIT ONLY WITH BUSHING AND PULL-STRING TO ACCESSIBLE CEILING SPACE. COORDINATE WITH OWNER'S ACCESS-CONTROL SYSTEM REPRESENTATIVE FOR EXACT LOCATION AND REQUIREMENTS, PRIOR TO ROUGH-IN.



KEY PLAN - PHASE 4

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MONTANA RICHARD J. DRIVDAHL 19773PE REGISTERED PROFESSIONAL ENGINEER 06/30/2014

ARCHITECT/ENGINEERS:

VCI Program, Project and Construction Management

Drawing Title: ELECTRICAL PLAN - PHASE 4

Approved: Project Director: AARON DRIVDAHL, PROJECT ENGINEER, VAMC FORT HARRISON

Project Title: VAMC FORT HARRISON SPD RENOVATION

Location: FT. HARRISON, MONTANA

Date: 07/18/2014 | Checked: ACB | Drawn: RJH

Project Number: 436-14-109

Building Number: 154

Drawing Number: ES104
Dwg. 38 of 39

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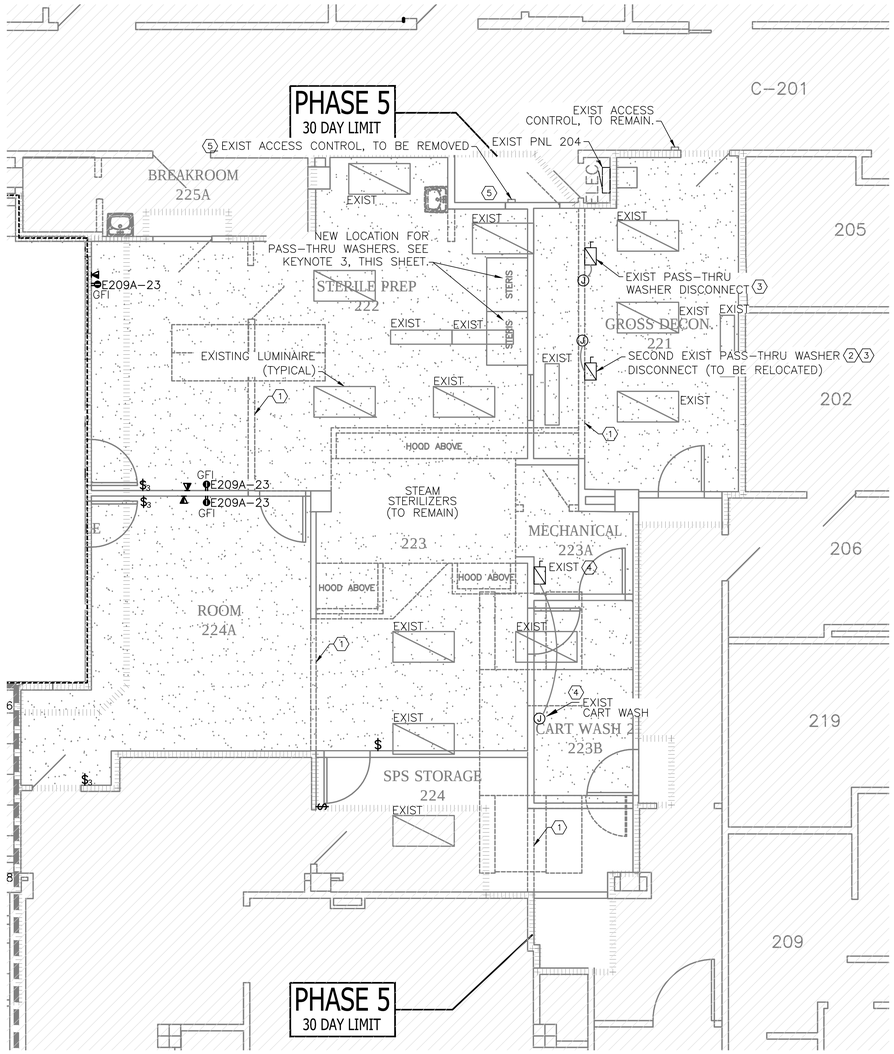
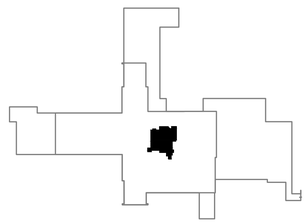


1 EB105 **PHASE 5 - ELECTRICAL PLAN**
1/4" = 1'-0"

PLAN NORTH



KEY PLAN - PHASE 5

GENERAL NOTES – DEMOLITION:

A. EXISTING EQUIPMENT, SUCH AS LIGHTING FIXTURES, WIRING DEVICES, CONDUITS, ETC., THAT ARE NOTED ON PLANS TO BE REMOVED, SHALL BE REMOVED COMPLETELY. CUT/CAP ABANDONED CONDUITS AT THE AREA OF WORK PERIMETER, REMOVE CONDUITS WITHIN THE WORK AREA THAT WILL NOT BE RE-USED, DISCONNECT WIRING AT THE BRANCH OVERCURRENT PROTECTIVE DEVICE AND REMOVE WIRING COMPLETELY FROM THE ABANDONED CONDUITS.

B. REMOVE ALL ACCESSIBLE ABANDONED WIRING OF ALL TYPES, OR CAP AND LABEL IN JUNCTION BOX FOR RE-USE, IN COMPLIANCE WITH THE NATIONAL ELECTRIC CODE.

C. MAINTAIN AND RESTORE, IF INTERRUPTED, ALL CONDUITS AND CONDUCTORS PASSING THROUGH RENOVATED AREAS AND SERVICING UNDISTURBED AREAS.

D. PHASE 5 DEMO NOTE: EXISTING LIGHTING IN RENOVATION SPACES IS TO REMAIN, TO THE EXTENT POSSIBLE. RELOCATE EXISTING LUMINAIRE(S) IF IN CONFLICT WITH NEW WALL CONSTRUCTION, OR STERILIZER/WASHER EQUIPMENT LOCATION CHANGES, AND CIRCUIT TO LIGHTING CONTROLS IN ASSOCIATED SPACE. PROVIDE NEW SWITCHING FOR NEWLY CREATED SPACES. (NOT ALL EXISTING LUMINAIRES ARE SHOWN.)

GENERAL NOTES:

A. ALL FINAL LOCATIONS AND ARRANGEMENTS OF LIGHTING FIXTURES SHALL BE OBTAINED FROM THE ARCHITECTURAL REFLECTED CEILING PLAN.

B. LIGHTING FIXTURES WITH MORE THAN TWO LAMPS SHALL HAVE TWO OUTER LAMPS CONTROLLED WITH ONE SWITCH AND INNER LAMP(S) CONTROLLED BY A SECOND SWITCH.

C. EACH BRANCH CIRCUIT HOMERUN SHALL HAVE: NO MORE THAN THREE CIRCUITS, A SEPARATE NEUTRAL FOR EACH CIRCUIT, AND A SEPARATE GREEN INSULATED EQUIPMENT GROUNDING CONDUCTOR.

D. MULTI-GANG BACKBOXES FOR DIFFERENT VOLTAGES AND TYPES OF EMERGENCY AND NORMAL BRANCH WIRING DEVICES SHALL HAVE DIVIDERS BETWEEN DEVICES.

E. IT IS ABSOLUTELY NECESSARY FOR ALL TRADES INVOLVED TO COORDINATE WITH EACH OTHER AND VERIFY THAT THERE ARE NO CONFLICTS IN LOCATION OF DUCTS, CONDUITS, DIFFUSERS, BOXES, AND OTHER ITEMS THROUGHOUT THIS PROJECT BEFORE FINAL PLACEMENT OF MATERIALS.

F. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL CUTTING OF FLOORS, WALLS, CEILINGS, AND ROOFS TO PERFORM THE REQUIRED WORK DEPICTED IN THESE DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR ALL PATCHING OF HOLES TO THE SATISFACTION OF THE ARCHITECT/ENGINEER.

G. PANEL AND CIRCUIT DESIGNATION ARE SHOWN NEXT TO EACH DEVICE(PANEL NAME – CIRCUIT NUMBER). BRANCH CIRCUIT WIRE SIZE IS #12 UNLESS NOTED OTHERWISE. LINE VOLTAGE AND LOW VOLTAGE WIRING IS NOT SHOWN ON PLANS.

H. PERTAINING TO ALL 120V RECEPTACLES: ALL NEW RECEPTACLES SHALL HAVE HOSPITAL GRADE LISTING, AND ALL EXISTING NON-HOSPITAL GRADE RECEPTACLES SHALL BE REPLACED WITH HOSPITAL GRADE LISTED RECEPTACLES.

I. ALL NEW RECEPTACLE AND EQUIPMENT PROVIDED IN PHASE 5 RENOVATION AREA SHALL BE CIRCUITED TO "EMERGENCY EQUIPMENT POWER", EXISTING PANEL E209A. SEE SHEET ES1.3 FOR PANEL LOCATIONS.

KEY NOTES:

1. EXIST WALL TO BE DEMO'D: DISCONNECT ALL DEVICES ON THIS WALL, AND RELOCATE TO NEAREST NEW WALL, AT OWNER-DIRECTED LOCATION. EXTEND EXISTING CIRCUIT AS REQUIRED. (NOT ALL EXISTING DEVICES HAVE BEEN SHOWN.)
2. PERTAINING TO THE 2ND PASS-THRU WASHER INSTALLATION: ENGINEER'S UNDERSTANDING IS THIS EQUIPMENT WILL BE INSTALLED/CIRCUITED BY OTHERS, PRIOR TO THIS CONTRACT, BUT THE EQUIPMENT SHALL BE RELOCATED TO THE NEW WALL UNDER THIS CONTRACT.
3. DISCONNECT PASS-THRU WASHER. RELOCATE FUSED-DISCONNECT TO NEW WALL LOCATION, EXTEND EXISTING CIRCUIT TO NEW LOCATION AND RE-TERMINATE. VERIFY EXACT LOCATION, PRIOR TO ROUGH-IN.
4. PERTAINING TO CART WASHER 2 REPLACEMENT: ENGINEER'S UNDERSTANDING IS THIS WORK WILL BE COMPLETED PRIOR TO THIS CONTRACT, BY OTHERS.
5. COORDINATE WITH OWNER, AND OWNER'S SPECIAL SYSTEM'S REPRESENTATIVE, PRIOR TO PERFORMING WORK.

Construction Document Submission
18 July 2014

Revisions:	Date
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ARCHITECT/ENGINEERS:

VCI Program, Project and Construction Management

Drawing Title: ELECTRICAL PLAN - PHASE 5	Project Title: VAMC FORT HARRISON SPD RENOVATION
Approved: Project Director: AARON DRIVDAHL, PROJECT ENGINEER VAMC FORT HARRISON	Location: FT. HARRISON, MONTANA
Date: 07/18/2014	Checked: ACB
Drawn: RJH	Project Number: 436-14-109
Building Number: 154	Drawing Number: ES105
Dwg. 39 of 39	Office of Construction and Facilities Management
Department of Veterans Affairs	

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